

February 13, 2004

Mr. David Graham  
City of Chicago, Department of Environment  
30 North LaSalle Street  
25<sup>th</sup> Floor  
Chicago, IL 60602

**Subject:**      **Limited Phase II Environmental Site Assessment Report**  
**Ingersoll Property**  
**Study Area No. 7 of the**  
**West Pullman Industrial Redevelopment Area**  
**Chicago, Illinois**

Dear Mr. Graham:

On the behalf of the City of Chicago, Department of Environment (CDOE), Tetra Tech EM Inc. (Tetra Tech) performed a limited Phase II environmental site assessment at the property formerly operated by Ingersoll Products Company (Ingersoll), located at 1000 West 120<sup>th</sup> Street within the West Pullman Industrial Redevelopment Area (WIRA) Study Area No. 7, in Chicago, Illinois. Figure 1-1 in Enclosure 1 is a site location map.

## **BACKGROUND**

Manufacturing operations at the site began in the 1890s. Previous operations included the production of lawnmowers, haymaking tools, and steel disks. On-site facilities included a machine shop, oil houses, a gas machine room, an underground gas oil tank, fuel oil tanks, heater rooms, two engines, two dynamos, 13 transformer rooms housing 32 transformers, a Commonwealth Edison electrical substation, an enameling room, an aboveground oil tank, a pickling area, a sulfuric acid tank, a cleaning room, a dipping room, an oven, and an annealing room.

## **ELECTRICAL TRANSFORMERS**

In June 2003, Effluent Technology, Inc., on behalf of Ingersoll, sampled the oil contained in the electrical transformers. The oil samples were analyzed for polychlorinated biphenyls (PCB) by SIMLABS International of Merrillville, Indiana. The analytical results are summarized in Table 2-1 in Enclosure 2. According to the analytical results, 20 of the 32 oil samples contained detectable concentrations of PCBs. Three of the oil samples contained PCB concentrations in excess of 500 parts per million (ppm). According to the Toxic Substances Control Act (TSCA), Title 40 of the *Code of Federal Regulations* (40 CFR), Chapter I, Subchapter B, Part 761.30, "Manufacturing, Processing, Distribution in Commerce, and Use of PCBs and PCB Items," transformers containing PCB concentrations in excess of 500 ppm are considered as PCB-containing, and must be handled in accordance with TSCA requirements. Attachment A contains the laboratory results of the transformer oil sampling.

## LIMITED PHASE II SCOPE OF WORK

On January 26 and 27, 2004, Tetra Tech performed a limited Phase II Investigation at the Ingersoll site. Tetra Tech advanced a total of 9 Geoprobe soil borings at the site and collected 18 soil samples, 2 groundwater samples, and 13 wipe samples. All of the soil borings were advanced to 10 feet below ground surface (bgs) except SB-07, which was advanced to 11 feet bgs. Soil samples were collected from the 0- to 3-foot bgs interval and from the 3- to 10-foot bgs interval for laboratory analysis. Soil borings SB-02 and SB-09 were converted into temporary groundwater monitoring wells. The wipe samples were collected from the floor of the 13 separate transformer room locations.

Composite soil samples were collected from the 0- to 3-foot bgs and 3- to 10-foot bgs intervals and placed in 4-ounce (oz) glass jars for laboratory analysis for semivolatile organic compounds (SVOC), total priority pollutant (TPP) metals, pH, and PCBs. Discrete soil samples were also collected from each interval and placed in 40-milliliter (mL) glass vials prepreserved with methanol and sodium bisulfate for volatile organic compound (VOC) analysis. In addition, two soil samples were analyzed for herbicides and pesticides.

Groundwater samples were collected using a peristaltic pump and analyzed for VOCs, SVOCs, TPP metals, pH, and PCBs. The VOC samples were collected in 40-mL vials prepreserved with hydrochloric acid. The TPP metals samples were collected in 250-mL plastic containers prepreserved with nitric acid. The SVOC and PCB samples were collected in 1-liter glass amber jars.

Wipe samples were collected using 2-inch by 2-inch gauze pads soaked in hexane. After the excess hexane was removed, the pads were used to wipe the floor from inside a 100 square-centimeter ( $\text{cm}^2$ ) area, folded over, and then placed in a 4-oz. jar for PCB analysis. Figure 1-2 in Enclosure 1 is a site map showing the soil boring, monitoring well, and wipe sample locations. Table 2-2 in Enclosure 2 summarizes the samples collected and laboratory analyses performed.

The soil, groundwater, and wipe samples were submitted to STAT Analysis Corporation (STAT) of Chicago, Illinois. The laboratory analytical results are summarized in Tables 2-3 through 2-8 in Enclosure 2.

## PHASE II LABORATORY ANALYTICAL RESULTS

### Soil Samples

The laboratory analytical results were compared with Title 35 of the Illinois Administrative Code (IAC) Part 742, Tiered Approach to Corrective Action Objectives (TACO) Tier 1 remediation objectives for industrial-commercial properties and for construction worker scenarios. No VOC, herbicide, or pesticide concentrations were detected in soil exceeding these scenarios. The laboratory analytical results indicate that the benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, carbazole, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene concentrations in SB-05-03 exceed the TACO Tier 1 remediation objective for the soil migration to groundwater exposure route for Class I groundwater. The laboratory analytical results also

indicate that the benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene concentrations in SB-05-03 exceed the TACO Tier 1 remediation objective for the ingestion exposure route for industrial-commercial properties. The benzo(a)anthracene, benzo(b)fluoranthene, and carbazole concentrations also exceed the TACO Tier 1 remediation objective for the soil migration to groundwater exposure route for Class II groundwater. The benzo(a)pyrene concentration also exceeds the TACO Tier 1 remediation objective for the ingestion exposure route for industrial-commercial properties and for the construction worker scenario. The VOC and SVOC soil sample analytical results are summarized in Tables 2-3 and 2-4 in Enclosure 2. The laboratory analytical reports are included in Enclosure 3.

Arsenic exceeds the Illinois Environmental Protection Agency background soil ingestion exposure route remediation objective of 13 milligrams per kilogram for the ingestion exposure route for industrial-commercial properties in samples SB-02-310 and SB-05-310. The lead concentrations detected in SB-01-03 and SB-03-03 exceed the TACO Tier 1 remediation objectives for the ingestion exposure route for industrial-commercial properties and for the construction worker scenarios. The PCB concentrations in soil samples SB-02-03, SB-04-03, and SB-04-310 exceed the TACO Tier 1 remediation objectives for the ingestion exposure route for industrial-commercial properties and for the construction worker scenarios. The TPP metal soil sample analytical results are summarized in Table 2-5 in Enclosure 2. The PCB soil sample analytical results are summarized in Table 2-6 in Enclosure 2. The laboratory analytical reports are included in Enclosure 3.

### **Groundwater Samples**

The lead concentration in the groundwater sample TMW-1 exceeds the TACO Tier 1 remediation objective for Class I groundwater, but does not exceed the Class II remediation objective. The arsenic and nickel concentrations in groundwater sample TMW-2 exceed the TACO Tier 1 remediation objectives for Class I groundwater, but do not exceed the Class II remediation objectives. The lead concentration in groundwater sample TMW-2 exceeds TACO Tier 1 remediation objectives for both Class I and II groundwater. The groundwater sample analytical results are summarized in Table 2-7. The laboratory analytical reports are included in Enclosure 3.

### **Wipe Samples**

Laboratory analytical results of wipe samples indicate that 7 of the samples contained PCBs at detectable levels. Six of the wipe samples (WP-1, WP-6, WP-9, WP-10, WP-12, and WP-13) contained concentrations exceeding 10 micrograms per 100 cm<sup>2</sup>. According to TSCA 40 CFR Chapter I, Subchapter A, Part 761.1, "General", provisions that apply to PCBs at concentrations that are equal or greater than 50 ppm also apply to contaminated surfaces at concentrations equal or greater than 10 micrograms per 100 cm<sup>2</sup>. Therefore, these surfaces are applicable to TSCA requirements. The wipe sample analytical results are summarized in Table 2-8. The laboratory analytical reports are included in Enclosure 3.

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## **CONCLUSIONS**

The transformer oil sampling performed by Effluent Technology, Inc., indicates that three of the transformers at the site are considered as PCB-containing and require handling in accordance with TSCA. The results of the limited Phase II conducted by Tetra Tech indicate that SVOCs, metals, and PCBs have impacted the soil at the property. Furthermore, wipe sample results indicate that PCB-containing oils, some at TSCA regulated levels, have impacted the concrete at 6 of the 13 transformer room locations. Table 2-9 in Enclosure 2 summarizes the number of samples collected and the number of samples that exceed TACO Tier 1 remediation objectives for each exposure pathway.

If you have any questions, please call me at (312) 946-6411.

Sincerely,

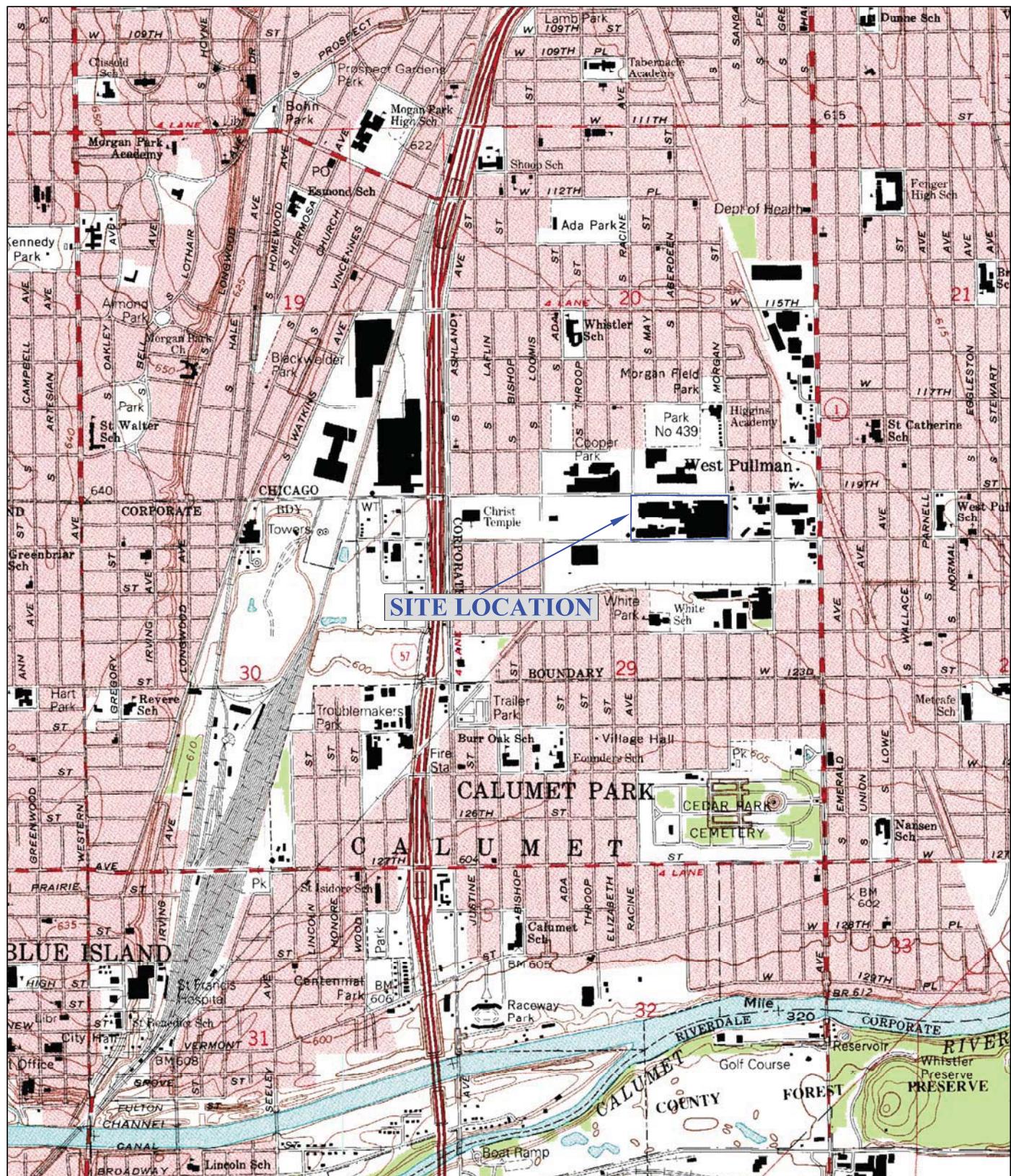
Carol Nissen  
Project Manager

Enclosures (3)

**ENCLOSURE 1**

**FIGURES**

(2 Pages)

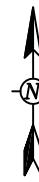


CITY OF CHICAGO  
DEPARTMENT OF ENVIRONMENT  
WEST PULLMAN INDUSTRIAL REDEVELOPMENT AREA  
INGERSOLL STUDY AREA NO. 7

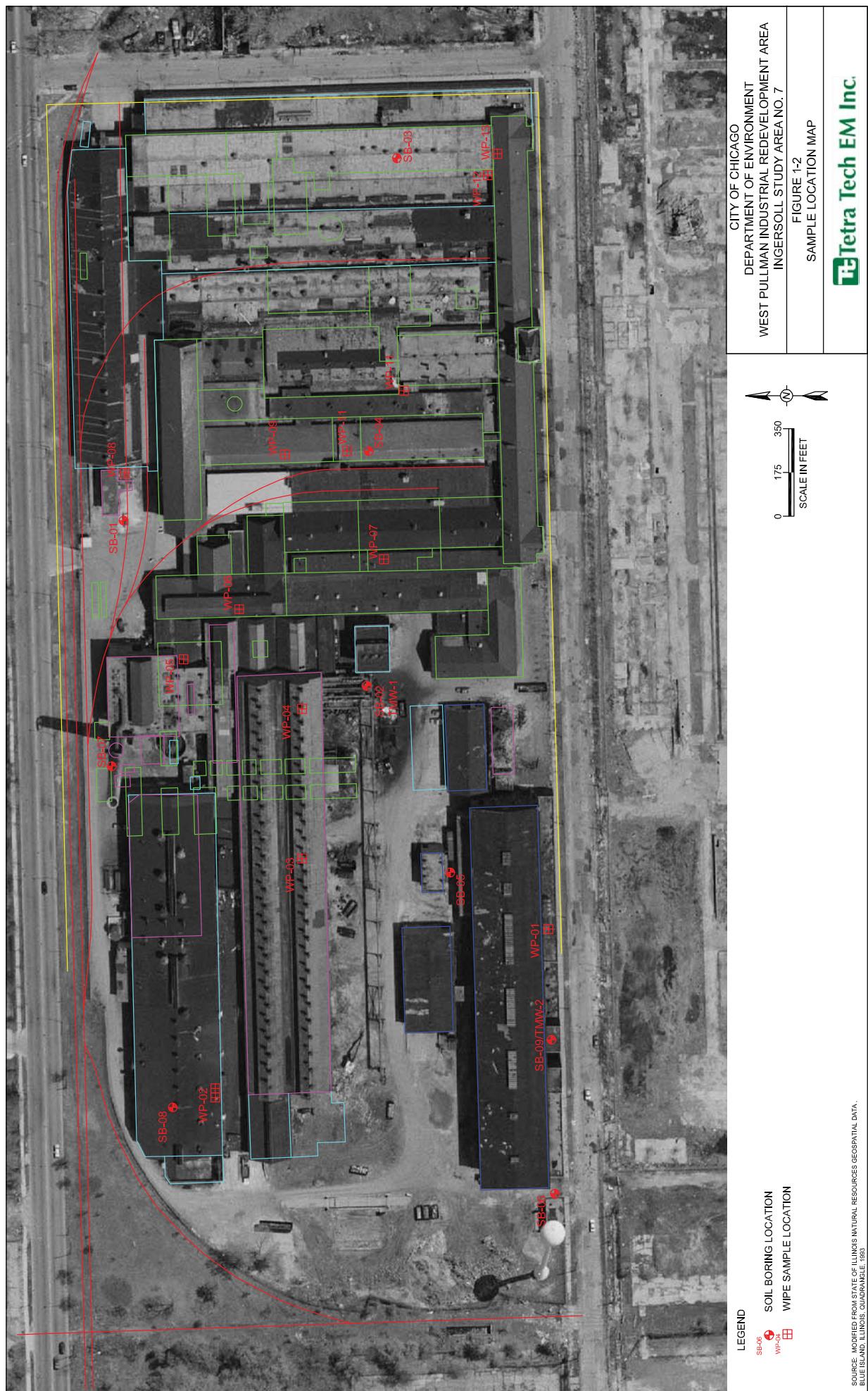
FIGURE 1-1  
SITE LOCATION MAP

**Tetra Tech EM Inc.**

SOURCE: MODIFIED FROM USGS, 7.5-MINUTE TOPOGRAPHIC MAP OF BLUE ISLAND, ILLINOIS, QUADRANGLE, 1993



0 1000 2000  
SCALE IN FEET



**ENCLOSURE 2**

**TABLES**

(13 Pages)

**TABLE 2-1**  
**TRANSFORMER OIL SAMPLE RESULTS**

Sample Identification	Sample Date	Tag Number	PCB Concentration
1	26-Jun-03	T&R Electric A93573	19
2	28-Jun-03	T&R Electric 93572	19
3	28-Jun-03	T&R Electric 93574	23
4-1	28-Jun-03	Allis Chambers 1A1568-7	3.9
4-2	28-Jun-03	Allis Chambers 1A1568-13	ND
4-3	28-Jun-03	Allis Chambers 1A1568-16	ND
5	28-Jun-03	Allis Chambers 3110737	<b>450,000</b>
6-1	26-Jun-03	Allis Chambers 1820484	ND
6-2	26-Jun-03	Allis Chambers 1820485	330
6-3	26-Jun-03	Allis Chambers 1820486	1.1
7-1	26-Jun-03	Westinghouse 1899123	ND
7-2	26-Jun-03	Westinghouse 1769372	ND
7-3	26-Jun-03	Westinghouse 1699142	110
7-3	24-Jul-03	Westinghouse 1699142	ND
8-B	26-Jun-03	T&R Electric A93574	3.5
8-1	26-Jun-03	T&R Electric 030317	33
8-2	26-Jun-03	T&R Electric 030315	5
8-3	26-Jun-03	T&R Electric 030316	33
8-4	26-Jun-03	T&R Electric Buss-Box	3.9
9-1	26-Jun-03	General Electric West Large	ND
9-2	26-Jun-03	General Electric Middle Large	ND
9-3	26-Jun-03	General Electric East Large	ND
9-4	26-Jun-03	General Electric 2179056	5.8
9-5	26-Jun-03	General Electric 2179059	ND
9-6	26-Jun-03	General Electric Small East	ND
10	26-Jun-03	General Electric 528942	<b>300,000</b>
11-1	26-Jun-03	Kuhlman - Large	<b>240,000</b>
11-2	26-Jun-03	Kuhlman - Small	36
12	26-Jun-03	General Electric 4498662	1.4
13-1	26-Jun-03	General Electric North	ND
13-2	26-Jun-03	General Electric Middle	1.3
13-3	26-Jun-03	General Electric South	1.1
13-4	26-Jun-03	General Electric Small	ND
G-2	24-Jul-03	Allis Chambers 1820485	ND

ND - Not detected

**TABLE 2-2**  
**NUMBERS AND TYPES OF INVESTIGATIVE AND QA/QC SAMPLES**

Analytical Parameter	Matrix	Investigative Samples	Duplicate Samples	MS/MSDs	Total Samples Analyzed	Analytical Method <sup>a</sup>
VOCs	Soil	18	2	1/1	22	8260B (5035)
	Water	2	0	0	2	8260B
SVOCs	Soil	18	2	1/1	22	8270C
	Water	2	0	0	2	8270C
TPP Metals	Soil	18	2	1/1	22	6010B (7470A)
	Water	2	0	0	2	6010B (7471A)
pH	Soil	18	0	0	18	9045C
	Water	2	0	0	2	9045C
PCBs	Soil	18	2	1/1	22	8082
	Water	2	0	0/0	2	8082
	Wipe	13	1	0/0	14	8082
Herbicides	Soil	2	0	0/0	2	8321
Pesticides	Soil	2	0	0/0	2	8081

Notes:

- MS/MSD = Matrix spike/matrix spike duplicate
- PCB = Polychlorinated biphenyl
- SVOC = Semivolatile organic compound
- TPP = Total priority pollutant
- VOC = Volatile organic compound

<sup>a</sup> The analytical method indicated is from the U.S. Environmental Protection Agency's "Test Methods for Evaluating Solid Waste" (SW-846) dated December 1996.

TABLE 2-3

## SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - VOCs

Parameter	Sample Number and Date Collected										Tier 1 Remediation Objectives/Industrial-Commercial Prop.				
	Industrial-Commercial					Construction Worker									
	Ingestion Exposure Route		Inhalation Exposure Route		Ingestion Exposure Route		Inhalation Exposure Route		Ingestion Exposure Route		Inhalation Exposure Route				
	Class I/Class II Migration to Groundwater Values	SB-03-310D 01/26/04	SB-03-310 01/26/04	SB-02-310D 01/27/04	SB-02-310 01/26/04	SB-02-310D 01/27/04	SB-02-310 01/26/04	SB-03-310 01/26/04	SB-03-310D 01/26/04	SB-03-310 01/26/04	SB-03-310D 01/26/04	SB-03-310 01/26/04	Ingestion Exposure Route	Inhalation Exposure Route	
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	0.018	ND	ND	ND	0.087	ND	ND	ND	ND	ND	0.025	NE/NE	NE	NE	NE
Carbon disulfide	ND	ND	ND	ND	0.011	ND	ND	ND	ND	ND	32/160	200,000	720	20,000	9
Chloroform	ND	ND	ND	ND	0.014	ND	ND	ND	ND	ND	0.6/2.9	940	0.54	2,000	0.76
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	23/110	200,000	1,700	200,000	130
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	NE	NE	NE	NE
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06/0.3	110	20	2,400	28
Toluene	ND	0.0076	ND	ND	ND	ND	ND	ND	ND	ND	12/29	410,000	650	410,000	42
1,1,1-Trichloroethane	ND	0.039	ND	ND	ND	ND	ND	ND	ND	ND	29/6	NE	1,200	NE	1,200
Xylenes, Total	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150/150	1,000,000	320	410,000	320

		Sample Number and Date Collected						Tier 1 Remediation Objectives/Industrial-Commercial Prop.			
Parameter	Sample ID	Industrial			Commercial			Construction Worker			
		Ingestion Exposure Route	Inhalation Exposure Route	Class I/Class II Migration to Groundwater Values	Ingestion Exposure Route	Inhalation Exposure Route	Class I/Class II Migration to Groundwater Values	Ingestion Exposure Route	Inhalation Exposure Route		
Acetone	SB-04-03 01/26/04	SB-04-310 01/26/04	SB-05-03 01/27/04	SB-05-310 01/27/04	SB-06-03 01/26/04	SB-06-310 01/26/04	SB-07-03 01/26/04	SB-07-311 01/26/04	SB-07-311 01/26/04	16/16	200,000
Benzene	0.049	0.047	ND	0.053 J	ND	ND	ND	0.031	ND	0.030/0.17	100
2-Butanone	0.021	ND	ND	0.0067 UJ	ND	ND	ND	ND	NE/NE	NE	2,300
Carbon disulfide	ND	ND	0.01	0.013 UJ	ND	ND	ND	0.011	NE/NE	NE	2.2
Chloroform	ND	ND	ND	0.0067 UJ	ND	ND	ND	ND	32/160	200,000	720
1,1,1-Dichloroethane	ND	ND	ND	0.0083 J	ND	ND	ND	ND	0.6/2.9	940	20,000
4-Methyl-2-pentanone	ND	ND	0.013 UJ	ND	ND	ND	ND	ND	NE/NE	NE	9
Tetrachloroethylene	ND	0.009	ND	0.0067 UJ	ND	ND	ND	ND	0.06/0.3	110	2,400
Toluene	ND	ND	ND	0.0067 UJ	ND	ND	ND	ND	12/29	410,000	650
1,1,1-Trichloroethane	ND	0.011	0.56	0.13 J	ND	ND	ND	ND	29/6	NE	410,000
Xylenes, Total	ND	ND	0.013 UJ	ND	ND	ND	ND	ND	150/150	1,000,000	320

TABLE 2-3

## SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - VOCs

Parameter	Sample Number and Date Collected			Class I/Class II Migration to Groundwater Values	Tier 1 Remediation Objectives/Industrial-Commercial Prop.		
					Industrial-Commercial	Inhalation Exposure Route	Ingestion Exposure Route
Acetone	SB-08-03 01/26/04	SB-08-310 01/26/04	SB-09-03 01/27/04	SB-09-310 01/27/04	ND	16/16	200,000
Benzene	ND	ND	ND	ND	0.030/17	100	1,6
2-Butanone	ND	ND	ND	ND	NE/NE	NE	2,300
Carbon disulfide	ND	ND	ND	ND	32/160	200,000	NE
Chloroform	ND	ND	ND	ND	0.6/2.9	720	20,000
1,1-Dichloroethane	ND	ND	ND	ND	0.008/3	940	9
4-Methyl-2-pentanone	ND	ND	ND	ND	0.034	NE/NE	0.54
Tetrachloroethene	ND	ND	ND	ND	0.06/0.3	23/110	2,000
Toluene	ND	ND	ND	ND	0.096	12/29	200,000
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	1,700	1,700
Xylenes, Total	ND	ND	ND	ND	0.028	150/150	200,000
						320	410,000
							320

Notes:

All values are expressed in milligrams per kilogram.

D = Duplicate sample  
 J = Estimated result  
 ND = Not detected

NE = Not established  
 NJ = Non-detect is estimated  
 VOC = Volatile organic compound

TABLE 2-4

## SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - SVOCs

Tier 1 Remediation Objectives/Industrial-Commercial Prop.									
Parameter	Sample Number and Date Collected			Class II/Class I Migration to Groundwater Values			Construction Worker		
	SB-01-03 01/26/04	SB-01-310 01/26/04	SB-02-03 01/27/04	SB-02-310D 01/27/04	SB-02-310 01/26/04	SB-03-310 01/26/04	SB-03-310D 01/26/04	Ingestion Exposure Route	Inhalation Exposure Route
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	NE	NE
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	120,000	120,000
Acenaphthylene	ND	ND	ND	ND	ND	ND	NE/NE	NE	NE
Anthracene	ND	ND	ND	ND	ND	ND	ND	610,000	610,000
Benz(a)anthracene	ND	ND	ND	ND	ND	ND	2/8	8	170
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	8/82	0.8	17
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	5/25	8	170
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	NE/NE	NE	NE
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	49/250	78	1,700
Carbazole	ND	ND	ND	ND	ND	ND	0.6/2.8	290	6,200
Chrysene	ND	ND	ND	ND	ND	ND	160/800	780	17,000
Dibenz(a,h)anthracene	ND	ND	ND	ND	ND	ND	2/7.6	0.8	17
Dibenzofuran	ND	ND	ND	ND	ND	ND	NE/NE	NE	NE
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	NE	NE
Fluorene	ND	ND	ND	ND	ND	ND	0.41	4,300/21,000	82,000
Hexachloroethane	ND	ND	ND	ND	ND	ND	560/2,800	82,000	82,000
Indeno(1,2,3-cd)pyrene	ND	ND	0.47	ND	ND	ND	0.5/2.6	2,000	2,000
Naphthalene	ND	ND	ND	ND	ND	ND	14/69	8	170
Phenanthrene	ND	ND	ND	ND	ND	ND	12/18	41,000	270
Pyrene	ND	1.1	ND	ND	ND	ND	NE/NE	NE	1,800
							4,200/21,000	61,000	61,000
Tier 1 Remediation Objectives/Industrial-Commercial Prop.									
Parameter	Sample Number and Date Collected			Class II/Class I Migration to Groundwater Values			Construction Worker		
	SB-04-03 01/26/04	SB-04-310 01/26/04	SB-05-03 01/27/04	SB-05-310 01/26/04	SB-06-03 01/26/04	SB-06-310 01/26/04	SB-07-03 01/26/04	SB-07-311 01/26/04	Ingestion Exposure Route
2-Methylnaphthalene	ND	ND	1.4	ND	ND	ND	ND	ND	120,000
Acenaphthene	ND	ND	7.3	ND	ND	ND	ND	NE/NE	120,000
Acenaphthylene	ND	ND	5.7	ND	ND	ND	ND	NE/NE	120,000
Anthracene	ND	ND	30	ND	ND	ND	ND	ND	610,000
Benz(a)anthracene	ND	ND	41	ND	ND	ND	ND	2/8	170
Benzo(a)pyrene	ND	ND	36	ND	ND	ND	ND	8/82	17
Benzo(b)fluoranthene	ND	ND	43	ND	ND	ND	ND	5/25	170
Benzo(g,h,i)perylene	ND	ND	15	ND	ND	ND	ND	NE/NE	NE
Dibenzofuran	ND	ND	19	ND	ND	ND	ND	49/250	1,700
Fluoranthene	ND	ND	9.1	ND	ND	ND	ND	0.6/2.8	6,200
Carbazole	ND	ND	45	0.44	ND	ND	ND	0.5/2.6	2,000
Chrysene	ND	ND	5.7	ND	ND	ND	ND	160/800	780
Dibenz(a,h)anthracene	ND	ND	ND	ND	ND	ND	2/7.6	0.8	170
Fluorene	ND	ND	130	ND	0.58	ND	ND	4,300/21,000	82,000
Hexachloroethane	ND	ND	13	ND	ND	ND	ND	560/2,800	82,000
Indeno(1,2,3-cd)pyrene	ND	ND	15	ND	ND	ND	ND	14/69	2,000
Naphthalene	ND	ND	1	ND	ND	ND	ND	12/18	41,000
Phenanthrene	ND	110	ND	ND	ND	ND	NE/NE	NE	1,800
Pyrene	ND	95	ND	0.63	ND	ND	ND	4,200/21,000	61,000
							61,000	NE	61,000

TABLE 2-4

## SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - SVOCs

Parameter	Sample Number and Date Collected			Class I/Class II Migration to Groundwater Values			Tier 1 Remediation Objectives/Industrial-Commercial			Construction Worker		
	SB-08-03 01/26/04	SB-08-310 01/26/04	SB-09-03 01/27/04	SB-09-310 01/27/04	Ingestion Exposure Route	Inhalation Exposure Route	Ingestion Exposure Route	Inhalation Exposure Route	Ingestion Exposure Route	Inhalation Exposure Route	Ingestion Exposure Route	
2-Methylnaphthalene	ND	ND	ND	ND	NE/NE	NE	NE	NE	NE	NE	NE	
Acenaphthene	ND	ND	ND	ND	570/2,900	120,000	NE	120,000	NE	NE	NE	
Acenaphthylene	ND	ND	ND	ND	NE/NE	NE	NE	NE	NE	NE	NE	
Anthracene	ND	ND	ND	ND	12,000/59,000	610,000	NE	610,000	NE	NE	NE	
Benzo(a)anthracene	ND	ND	1.2	ND	2/8	8	NE	170	NE	NE	NE	
Benzo(a)pyrene	ND	ND	0.4	ND	8/82	0.8	NE	17	NE	NE	NE	
Benzo(b)fluoranthene	ND	ND	0.38	ND	5/25	8	NE	170	NE	NE	NE	
Benzo(g,h,i)perylene	ND	ND	ND	ND	NE/NE	NE	NE	NE	NE	NE	NE	
Benzo(k)fluoranthene	ND	ND	ND	ND	49/250	78	NE	1,700	NE	NE	NE	
Carbazole	ND	ND	ND	ND	0.6/2.8	290	NE	6,200	NE	NE	NE	
Chrysene	ND	ND	1.5	ND	160/800	780	NE	17,000	NE	NE	NE	
Dibenz(a,h)anthracene	ND	ND	ND	ND	277.6	0.8	NE	17	NE	NE	NE	
Dibenzofuran	ND	ND	ND	ND	NE/NE	NE	NE	NE	NE	NE	NE	
Fluoranthene	ND	ND	2.7	ND	4,300/21,000	82,000	NE	82,000	NE	NE	NE	
Fluorene	ND	ND	ND	ND	560/2,800	82,000	NE	82,000	NE	NE	NE	
Hexachloroethane	ND	ND	ND	ND	0.5/2.6	2,000	NE	2,000	NE	NE	NE	
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	14/69	8	NE	170	NE	NE	NE	
Naphthalene	ND	ND	ND	ND	12/18	41,000	270	4,100	1,8	NE	NE	
Phenanthrene	ND	ND	1.2	ND	NE/NE	NE	NE	NE	NE	NE	NE	
Pyrene	ND	ND	3.6	ND	4,200/21,000	61,000	NE	61,000	NE	NE	NE	

Notes:

All values are expressed in milligrams per kilogram.

Bolded values exceed TACO Tier 1 soil remediation objectives.

D = Duplicate sample

ND = Not detected

NE = Not established

SVOC = Semivolatile organic compound

TACO = Tiered Approach to Corrective Action Objectives

TABLE 2-6

SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - PCBs

		Sample Number and Date Collected						Tier 1 Remediation Objectives/Industrial-Commercial Prop.			
Parameter	PCBs	SB-01-310 01/26/04			SB-02-310 01/26/04			SB-02-310D 01/26/04			Class I/Class II Migration to Groundwater Value
		SB-01-03 01/26/04	SB-02-03 01/26/04	SB-02-310 01/26/04	SB-02-310D 01/26/04	SB-03-03 01/26/04	SB-03-310 01/26/04	SB-03-310D 01/26/04	Ingestion Exposure Route	Inhalation Exposure Route	Ingestion Exposure Route
Aroclor-1016	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE
Aroclor-1221	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE
Aroclor-1232	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE
Aroclor-1242	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE
Aroclor-1248	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE
Aroclor-1254	ND	ND	ND	ND	ND	0.21	0.24	0.19	NE/NE	1	NE
Aroclor-1260	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE

		Sample Number and Date Collected						Tier 1 Remediation Objectives/Industrial-Commercial Prop.						
Parameter	PCBs	SB-04-03 01/26/04			SB-04-310 01/26/04			SB-05-03 01/26/04			SB-05-310 01/26/04			
		SB-06-03 01/26/04	SB-06-03 01/26/04	SB-06-03 01/26/04	SB-06-310 01/26/04	SB-06-310 01/26/04	SB-06-310 01/26/04	SB-07-03 01/26/04	SB-07-03 01/26/04	SB-07-311 01/26/04	Ingestion Exposure Route	Inhalation Exposure Route	Ingestion Exposure Route	Inhalation Exposure Route
Aroclor-1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE	1
Aroclor-1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE	1
Aroclor-1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE	1
Aroclor-1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE	1
Aroclor-1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE	1
Aroclor-1254	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE	1
Aroclor-1260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE/NE	1	NE	1

TABLE 2-6

## SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - PCBs

PCBs Parameter	Sample Number and Date Collected			Class I/Class II Migration to Groundwater Value	Tier 1 Remediation Objectives/Industrial-Commercial Construction Worker		
	SB-08-03 01/26/04	SB-08-310 01/26/04	SB-09-03 01/27/04		Ingestion Exposure Route	Inhalation Exposure Route	Ingestion Exposure Route
Aroclor-1016	ND	ND	ND	ND	NE/NE	1	NE
Aroclor-1221	ND	ND	ND	ND	NE/NE	1	NE
Aroclor-1232	ND	ND	ND	ND	NE/NE	1	NE
Aroclor-1242	ND	ND	ND	ND	NE/NE	1	NE
Aroclor-1248	ND	ND	ND	ND	NE/NE	1	NE
Aroclor-1254	ND	ND	0.19	ND	NE/NE	1	NE
Aroclor-1260	ND	ND	ND	ND	NE/NE	1	NE

Notes:

All values are expressed in milligrams per kilograms.

Bolded values exceed TACO Tier 1 remediation objectives

D = Duplicate sample  
 ND = Not detected  
 PCB = Polychlorinated biphenyl  
 TACO = Tiered Approach to Corrective Action Objectives

**TABLE 2-7**  
**SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS**

Parameter	Sample Number		Tier 1 Groundwater Remediation Objectives	
	TMW-1	TMW-2	Class I	Class II
<b>PCBs</b>	ND	ND	NA	NA
<b>SVOCs</b>	ND	ND	NA	NA
<b>VOCs</b>	ND	ND	NA	NA
<b>TPP Metals</b>				
Antimony	ND	ND	0.006	0.024
Arsenic	0.034	<b>0.052</b>	0.05	0.2
Beryllium	ND	ND	0.004	0.5
Cadmium	ND	ND	0.005	0.05
Chromium	0.032	0.093	0.1	1
Copper	0.047	0.22	0.65	0.65
Lead	<b>0.036</b>	<b>0.38</b>	0.0075	0.1
Mercury	ND	ND	0.002	0.01
Nickel	0.055	<b>0.13</b>	0.1	2.0
Selenium	ND	ND	0.05	0.05
Silver	ND	ND	0.05	NE
Thallium	ND	ND	0.002	0.02
Zinc	0.11	0.56	5.0	10.0
pH	6.8	6.9	NE	NE

Notes:

All metals concentrations are expressed in milligrams per liter.

Shaded values exceed Tier 1 groundwater remediation objectives.

NA = Not analyzed  
 ND = Not detected  
 NE = Not established  
 TPP = Total priority pollutant

TABLE 2-8

## SUMMARY OF WIPE SAMPLE ANALYTICAL RESULTS - PCBs

PCBs	Parameter	Sample Number and Date Collected						TSCA Remediation Objective Value
		WP-1 01/27/04	WP-2 01/27/04	WP-3 01/27/04	WP-4 01/27/04	WP-5 01/27/04	WP-6 01/27/04	
Aroclor-1016	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1221	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1232	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1242	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1248	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1254	110	ND	2.4	ND	ND	ND	ND	ND
Aroclor-1260	70	ND	ND	ND	ND	ND	ND	ND

PCBs	Parameter	Sample Number and Date Collected						TSCA Remediation Objective Value
		WP-9 01/27/04	WP-10 01/27/04	WP-11 01/27/04	WP-12 01/27/04	WP-13 01/27/04	WP-13D 01/27/04	
Aroclor-1016	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1221	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1232	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1242	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1248	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1254	ND	18	ND	ND	ND	ND	ND	ND
Aroclor-1260	39	ND	560	7	ND	ND	25	10

Notes:

All values are expressed in micrograms per 100 cm<sup>2</sup>  
 Bolded values exceed the TSCA remediation goal of 10 micrograms per 100 cm<sup>2</sup>

D = Duplicate sample  
 ND = Not detected  
 PCB = Polychlorinated biphenyl  
 TSCA = Toxic Substances Control Act

TABLE 2.9

## NUMBERS OF SOIL, GROUNDWATER, AND WIPE SAMPLES WITH CONSTITUENT CONCENTRATIONS EXCEEDING TACO TIER I REMEDIATION OBJECTIVES

Parameter Whose Concentrations Exceed Tier 1 Remediation Objectives	Total Number of Investigative Samples	Sample Concentration Range	Number of Samples with Concentrations Exceeding Migration to Groundwater Remediation Objectives		Number of Samples with Concentrations Exceeding Tier 1 Remediation Objectives for Industrial-Commercial Properties	
			Class I	Class II	Industrial-Commercial	Construction Worker
<b>Soil Samples</b>						
Benzo(a)anthracene	18	ND to 41	1	1	1	NE
Benzo(a)pyrene	18	ND to 36	1	0	NE	1
Benzo(b)fluoranthene	18	ND to 43	1	1	NE	0
Carbazole	18	ND to 9.1	1	0	NE	0
Dibenz(a,h)anthracene	18	ND to 5.7	1	0	NE	0
Indeno(1,2,3-c,d)pyrene	18	ND to 15	1	0	NE	0
Arsenic	18	1.8 to 17	0	0	2 <sup>a</sup>	0
Lead	18	6 to 530	NE	2	NE	0
PCBs	18	ND to 3.5	NE	3	NE	2
<b>Groundwater Samples</b>						
Arsenic	2	0.034 to 0.052	1	0	NE	NE
Lead	2	0.036 to 0.38	2	1	NE	NE
Nickel	2	0.055 to 0.13	1	0	NE	NE
<b>Wipe Samples</b>						
PCBs	13	ND to 560	6	samples exceeded the TSCA-recommended remediation goal of 10 micrograms per 100 cm <sup>2</sup>		

Notes:

All soil concentrations are expressed in milligrams per kilogram.

All groundwater concentrations are expressed in milligrams per liter.  
All wipe samples are expressed in micrograms per 100 cm<sup>2</sup>.ND = Not detected  
NE = Not established

TSCA = Toxic Substances Control Act

<sup>a</sup> Number of samples with arsenic concentrations exceeding Illinois Environmental Protection Agency proposed soil ingestion exposure route background value of 13 milligrams per kilogram

**ENCLOSURE 3**

**LABORATORY ANALYTICAL REPORT**

Laboratory Reports not provide to Shaw  
for the Phase I ESA

**ATTACHMENT A**

**TRANSFORMER OIL LABORATORY ANALYTICAL REPORT**

Laboratory Reports not provide to Shaw  
for the Phase I ESA

